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State of North Carolina
Department of Agriculture
Raleigh

JAMES A. GRAHAM
COMMISSIONER

February 19, 1981

CRITICAL AND ESSENTIAL NEEDS

What you have in this packet is a description of the critical and essential needs in the North Carolina Department of Agriculture. Only these needs which I know beyond a shadow of a doubt are of a critical and essential nature are included.

Hopefully, you will find that the proposals address real and not frivilous needs. The information has been designed to briefly describe what the problem is, who it affects, and what the results of meeting or not meeting the needs are.

I solicit your comments, criticism, and, if you agree with the needs, your support in trying to meet them. If you need more information or have questions about the information, please let me know.

Thank you for being concerned and interested in the future of the most vital and fundamental profession of all-agriculture.

With all good wishes.

Cordially,

James A. Graham

James A. Graham
Commissioner

PROTECTING THE PUBLIC FROM EXPOSURE TO AFLATOXIN

Aflatoxin is a dangerous carcinogen produced by a fungus which grows on grain after harvest. This toxin can also be produced in storage bins, during transport, or in foods and feed products held at moderately high temperature at a moisture content over 15 percent.

Aflatoxin finds its way into the diet of the people of North Carolina largely through cornmeal and other foods produced from corn. Analysis of cornmeal by NCDA twice yearly for the past four crop years has demonstrated the seriousness of the problem. In the poor crop year of 1977, 32% of 549 cornmeal samples tested contained aflatoxin in excess of the action level of 20 parts per billion, and were considered to be adulterated. Even in the better crop years of 1978 and 1979, 17 and 16 percent, respectively, of samples tested were found to be adulterated. In the Fall of 1980, after a very poor growing season, a survey of products from all mills in North Carolina found 48% of these to be adulterated! 53 products from 14 firms were recalled as a result of that one survey. Consumers in this State have, without doubt, unknowingly included aflatoxin in their diets by eating cornmeal products.

This is a serious situation which demands immediate correction. Increasing our frequency of cornmeal mill inspection to three times yearly is totally inadequate.

By drawing all food inspection and laboratory resources to bear in this emergency, we are sampling and testing all corn supplies at mills before grinding, and are analyzing cornmeal products from all mills for aflatoxin each week. This has brought all other food regulatory and surveillance programs to a standstill. Currently each of our 15 inspectors has an average of 208 firms for which he is responsible.

Temporary emergency support from the Contingency and Emergency Fund is allowing us to meet our needs for additional people and additional laboratory capability until July 1. However, the need to continue this funding for aflatoxin surveillance into the next biennium is critical.

Failure to fund this program would allow it to revert back to limited coverage, such that the public cannot be protected. If public confidence is lost, the reduction in sales of cornmeal will seriously damage the milling industry.

We can maintain this program of additional testing if we are funded to do the following:

1. Equip our Salisbury laboratory and staff it with one Chemical Analyst and a Laboratory Helper.

2. Expand our Central laboratory staff by two Chemical Analysts and two lab helpers.

3. Increase our field inspection force by adding five Food Regulatory Specialists.

4. Provide corresponding support in equipment, supplies and travel.

The attached budget estimate indicates the amount needed for the new biennium.

Surveillance of Cornmeal for Aflatoxin Contamination

	1981-82	1982-83
1211 Salaries and Wages-SPA		
5 Food Regulatory Specialist I @ $13,572	$67,860	$67,860
2 Chemical Analysts II @ $14,196	28,392	28,392
1 Chemical Analyst I @ $12,996	12,996	12,996
3 Laboratory Helpers @ $7,452 (2nd Step)	22,356	22,356
	131,604	131,604
1811 Social Security Contribution	8,792	8,818
1821 Retirement Contribution @ 9.66	12,713	12,713
1831 Hospitalization Insurance @ $33	4,356	4,356
Salaries and Benefits	157,465	157,491
5303 Laboratory Equipment	10,000	10,000
2320 Laboratory Supplies	14,000	14,000
2990 Other Laboratory Supplies	3,000	3,000
3100 Travel	7,000	7,000
2500 Motor Vehicle Operation	8,000	8,000
5400 Motor Vehicles	-	-
	$199,465	$199,491

FORAGE TESTING PROGRAM

It is essential that farmers are provided with complete information on the nutrient content of feeds in order to balance rations and become more efficient in animal production.

The only way to know the value of a given lot of feed is through laboratory analysis, such as that provided by the NCDA Forage Testing program which was initiated in October of 1980.

When the original request for appropriations for the Forage Testing Service was made by the dairy and livestock industry in February, 1980, the sample load was anticipated to be 1000 samples/year. The manpower and equipment needs were based on that number. Any more than that would require more space, more manpower and more equipment.

We can expect to receive 4000-5000 samples per year with about 75% of these to be submitted between October and March of each year. Currently we are receiving up to 30 samples per day, and our regulatory feed samples are being delayed. This large demand for analysis during the October-March period necessitates increased manpower and equipment requests.

This need is critical in order to provide the service that farmers are demanding. Even if we ran shifts we would not be able to handle the increased number of samples because the present equipment is currently being utilized at full capacity.

If the funds requested to update the program are not appropriated, we will have to ask farmers to send those samples we cannot handle to a private laboratory for analysis. This will result in a much greater cost to the farmer and a longer period of time in receiving the results of analysis.

Our calculations are that one analyst-year is required for each 1000 samples. During the heavy season an equivalent of 8 analysts will be needed, but less than that for the remainder of the year. This can be handled by hiring two full-time analysts and utilizing Fertilizer Personnel to fill in. Our present laboratory helpers and secretary can handle the extra influx of samples without additional help in these areas. The requested equipment will allow us to increase our capacity to handle the increased number of samples.

A budget page listing line item detail of the requested funds is included in the packet of material supplied to you.

FORAGE TESTING PROGRAM

Funds requested to expand testing capacity to 5000 samples/year:

			1981-82	1982-83
1211	Salaries			
	Chemical Analyst I, Grade 64, 2 @ $12,996		$ 25,992	$ 25,992
1811	Social Security Contribution		1,736	1,741
1821	Retirement and Contribution		2,505	2,505
1831	Hospitalization Insurance		792	792
2320	Laboratory Supplies		12,000	12,000
2600	Office Supplies and Materials		300	300
3100	Travel		500	500
3210	Telephone		500	500
3250	Postage		500	500
3520	Repairs to Equipment		500	500
3600	Freight, Express and Delivery		100	100
4903	General Expense		100	100
5303	Laboratory Equipment		17,145	
	Digital Analytical Balance	$4,500		
	Drying Oven	2,200		
	Carts, 3 @ $240	720		
	Vacuum Pump	1,700		
	Auto Diluter	1,725		
	AA Auto Sampler	5,200		
	Muffle Furnace	1,100		
	Total		$62,670	$45,530

INCREASED LABORATORY CAPACITY AND ANALYTICAL CAPABILITY

The funds which are being requested would be used to increase the laboratory capacity and analytical capability of the Agronomic Division. This Division provides the soil testing, plant analysis and nematode advisory services to the citizens of North Carolina.

The funds being requested are $44,631 for the first year and $27,855 for the second year of the 1981-83 biennium. These funds would supplement the recommended expansion budget presently before the Legislature.

These funds would be used to hire six Lab Helpers (approximately six months each year), supplement our office and laboratory supply needs and purchase equipment to increase our nematode identification capability.

In order to identify why these funds are needed, we need to look at the past, present and immediate future. During the past six years the demand for soil testing, plant analysis and nematode advisory services have increased 94%, 663% and 445%, respectively.

Presently, the demand for these services exceed our capacity. Consequently, our laboratory turn-around-time has been 6-8 weeks for soil testing, 4-5 weeks for plant analysis and 8-10 weeks for nematode assay. Obviously, this turn-around-time is unacceptable to meet the needs of North Carolina farmers.

In looking at our past work-load trends and our immediate situation, we firmly believe that the demand for these agronomic services will increase further in the future. However, our ability to deliver these services will

decrease without additional funding. Without additional funding we will be forced to refuse additional samples or have extremely long delays in providing results and recommendations to farmers.

In addition to increasing our capacity to deliver these services, we desperately need to increase our nematode identification capability. There are ten economically important nematodes in North Carolina which annually cause losses of approximately 40 to 60 million dollars. Two most destructive nematodes are soybean cyst and root-knot. There are four races of the soybean cyst and four species of root-knot nematodes present in North Carolina. Presently, we use cropping history to "speculate" as to which race/species exist and thus recommend varieties which have resistance. However, all "resistant varieties" do not have resistance to all race/species. Judging from reduced yields farmers are experiencing with resistant varieties, all race/species are on the increase. Therefore, it is critical that the Division increase its capability to identify race/species so that farmers can use crops resistance and rotation to their advantage instead of having to rely so heavily on expensive chemical control.

Now, the question arises as to how the "increased laboratory capacity and analytical capability" of the Agronomic Division benefits people? Research and experience show that farmers can benefit through efficiency of production when they use scientifically sound agronomic services. Agronomic services provide technologically sound and non-biased guidance in the use of fertilizers, pesticides and advanced management practices. It is through the sound use of these products and management practices that food and fiber can be produced efficiently and where high probability of profit exists. With the increasingly high production cost, farmers need to use all the technological services available in order to remain in business. In addition, consumers benefit indirectly

from the farmers use of the Soil, Plant and Nematode Advisory Services. As farmers become more efficient they can sell their products in the market place at a lower price and still make a profit. As a result of the accrued production efficiency of our farmers, Americans spend approximately 20% of their disposable income for food. Consumers in some parts of the world spend 70% of their disposable income for food.

A second benefit is in the conservation of limited natural resources. Since the known U.S. and World phosphate and potash reserves are limited we should use them prudently, as indicated by agronomic services. These minerals should be mined, and manufactured into fertilizers and used in crop production only where their use will produce an economic return. The remainder of the minerals should be conserved in place for future generations to use since phosphate and potash are vital for both plant and animal life.

A third benefit is in environmental conservation. Farmers, as will as non-farmers, need to be concerned about keeping soil and nutrients in place. We know that under certain circumstances nutrients can leach into groundwaters and run off into streams polluting the environment. Agronomic services are recognized as the best tools for providing guidance in minimizing agricultures contribution to the pollution load.

In addition, the Legislature body of 1939 accepted the responsibility of providing a soil testing service to individual farmers who, collectively, make up our largest industry. Subsequently, plant analysis and nematode advisory services were added to the responsibilities of this Division. These key production services have grown in importance from a level when no other organization would accept the responsibility to the present level of volume and credibility

that would be welcomed by any organization. If we are forced to limit our response to this increasing demand, many of our farmers will be forced to seek the services from other sources outside the state where their economic well-being may not be top-priority.

In summary, additional funds are requested to meet the increasing demand of the citizens of North Carolina for the soil, plant and nematode advisory services. The services provided will assist growers in the efficient use of fertilizers, conserve natural resources, insure environmental protection, identify major crop production problems and enhance farmers ability to produce crops economically. All the above factors will ultimately benefit every citizen in North Carolina.

INSPECTION OF NEW FUELS AND REPLACEMENT OF EQUIPMENT

The internal combustion engine has almost exclusively run on petroleum fuels and the Standards Laboratory at the Department of Agriculture has been equipped to handle the testing and analysis of this fuel. This laboratory, however, is very limited in the testing of some of the newer alcohol and other synthetic fuels. While the Gasoline and Oil Inspection law requires the marketer of a new fuel to prove the viability of the fuel, the Department does not have the capability to test the fuel after it has been introduced in the marketplace. These fuels are before the public now and many of them are somewhat questionable in quality.

Already, there have been attempts to introduce alternate fuels of questionable derivation and for which there exists no record of proven viability. Since alternate and synthetic fuels may take many forms, it is usually impossible to apply conventional quality standards and test procedures. What are the consequences of introducing substandard fuels in the marketplace? Aside from the annoyance of poor performance, the fuels may cause extensive and costly damage to vehicle engines. Some of this damage may be from methanol based fuels, high sulphur content and other questional chemical combinations. Afterall, the higher the price of gasoline the more economically feasible it is to use synthetic fuels, fuels for which there exists no performance data or other long-term storage and use characteristics. Without the proper testing equipment, the motoring public will become the testing laboratory because they are the ones that will test the fuel.

In addition to the need for equipment to test new fuels, the Department must replace old equipment and purchase more automated equipment. The two factors that dictate this need are: (A) much of the present petroleum testing equipment is old and there exists no replacement repair parts for this equipment and (B) the quality of all fuels has dropped and this has necessitated a closer scrutiny of every fuel. This closer scrutiny cannot be adquately performed on the present equipment because of limits in capacity and design. Also, other state agencies have placed a bigger burden on the laboratory by requesting fuel analyses and the State's oil re-refining facility has added to the workload. The management of the oil re-refining facility looks to the Department's laboratory for assistance in chemical analysis of the used oils and for certification of the facility's final product. Currently the Department can only provide very limited assistance in the re-refining process.

Often the Department and the Gasoline and Oil Inspection Board are approached by concerned parties in regards to the need for particular quality tests. These parties may have developed data indicating the need for items such as the limitation of sulphur in diesel fuel or the certification of alcohol that is used in making gasohol. Many of these requests have merit but, unfortunately, the Department often does not have the necessary testing equipment. There are some informed people that feel the state may become a major market for high sulphur fuels if quality standards are not developed. If because of the lack of proper equipment the Department cannot certify compliance with lawfully established standards, then the standards will have little value.

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Without adequate and modern equipment the laboratory will be out of business. For example, there is no way to test for lead contamination if the laboratory's Atomic Absorption Unit fails, the demand for sulphur determinations cannot be handled by the laboratory's only sulphur unit, and the laboratory's only Gas Chromatograph has only recently been placed back in service after a major part failed. The repair cost of the Gas Chromatograph unit exceeded $6,000 which further demonstrates the need for periodic replacement of heavily used equipment.

In summary, the Department does not have much of the equipment needed to test the newer fuels that are now entering the marketplace. Also, should some of the existing equipment fail, the laboratory could not perform many of required quality tests. There is no backup equipment and the existing equipment is operating at maximum capacity. Finally, the State's investment in the oil re-refining unit cannot be fully realized until the agency assigned the responsibility of testing recycled and re-refined oils has the proper equipment to certify the quality of those oils.

COST	1981-82	1982-83
1. Laboratory equipment which includes: 2 A-A units, data processing accessory for GC unit, automatic flash tester, distillation unit	$ 71,600	$ 12,500
2. Laboratory Supplies	1,500	1,500
3. Repairs to Equipment	500	1,500
4. Purchases for Analysis	1,000	1,000
5. Miscellaneous Items	700	600
TOTAL	$ 75,300	$ 17,100

EXPANDED CALIBRATION CAPABILITIES

For years the Department of Agriculture has concerned itself with the accuracy of fuel measurement at the retail level. Afterall, it wasn't many years ago, that the wholesale price of kerosene was 15¢ per gallon. Terminal operators and jobbers were not too concerned with the accuracy of their meters and metering systems.

All of that has now changed. Each segment of the distribution chain must now account for product exchanges. Any shortage, anywhere in the chain, will be passed along to the retail customer. Also, the state may loose revenue because of incorrect invoices due in part to inaccurate metering. For some time now, the Department has been urged by local jobbers to certify the accuracy of terminal meters. In 1979, the Department placed into operation a terminal meter prover and this prover is used to test the 509 terminal meters at the 7 terminals around the state. Terminal locations are: Wilmington, Fayetteville, Selma, Apex, Greensboro, Salisbury, and Paw Creek (Charlotte). The fastest calibration cycle that the Department can expect in this program is 8-9 months and this in only under optimum operating conditions. Because of equipment failures and other hinderances, the current schedule is one in which the meters are tested once every 12 to 14 months. This time lag is not acceptable to the jobbers, to the Department, and to the consumer that will bear the burden of product shortages.

In addition to the terminals and retail gasoline pumps, there is one more part of the distribution chain - the local jobber's rack meters. While these meters are often used as internal inventory control meters, many jobbers sell to other jobbers through the meters. The Department has no reliable way

to certify the accuracy of these approximately 1,534 meters. Again, the consumer probably pays for any product shortages.

What will rectify the problem of meter inaccuracy throughout the distribution chain? The following:

(a) An additional 1000 gallon terminal prover

(b) A 500 gallon rack meter prover

It must be understood, however, that this equipment does not operate itself. Even with the Department's existing terminal prover the Department finds itself robbing Peter to pay Paul. To operate the existing terminal prover, the Department must use vehicle tank meter calibrators (the people who certify home delivery meters) and gasoline pump inspectors. This procedure means an approximate reduction of 10% in the number of retail gasoline pump inspections and an even larger reduction in the number of vehicle meter inspections. The bottom line is simply that the Department must reduce two programs to implement and carry on another.

There is a solution to this problem without the need for additional personnel. Currently, the Department has two van units that are used in the retail inspection of gasoline pumps. Experience indicates that twice as many pumps can be tested with the van units as opposed to an inspector and his traditional inspection equipment. The van units increase an inspector's efficiency by reducing the manual labor that he must perform. Unfortunately, the vast majority of the program's inspectors perform inspections by the traditional method. The Department could solve the manpower problem caused by the larger provers if it was authorized to purchase 6 additional van units. These 6 units would replace 3 pump inspectors that could be assigned to the terminal and rack meter provers. This shift would allow for the terminal and rack meter inspections and would also increase retail gasoline pump inspections and vehicle meter

inspections without the need for additional personnel.

In summary, the Department is requesting:

(a) An additional 1000 gallon terminal prover

(b) 500 gallon rack meter prover

(c) 6 additional van units that would allow the shifting of personnel to operate the larger provers.

Without this capability, the consumer will continue to bear the cost of product shortages and inaccuracies in the petroleum metering systems.

COST	1981-82	1982-83
1. 1 - 1000 gallon trailer mounted prover with associated equipment	$ 31,000	
2. 1 - 500 gallon truck mounted prover with associated equipment	25,000	
3. Truck for towing prover	10,000	
4. 6 - van units with modifications (12,100 each)	72,600	
5. Test measures for van (18 required at $800 each)	14,400	
6. Misc. tools, fittings, etc.	2,500	
7. motor vehicle operation	4,500	9,600
8. Repairs to equipment		750
TOTAL	$ 160,000	$ 10,350

GRAIN MOISTURE METER TESTING

The money a farmer receives for his grain crop is based to a great extent on two measurable factors ---- weight and moisture. The weight is determined on scales and the moisture is determined by a moisture meter. While the Department of Agriculture regularly certifies the scales that the grain is weighed on, no one performs an official test on the moisture meter. Without knowing the accuracy of the moisture meter, the seller of grain is doing a bit of gambling. A 1% error in the moisture reading can affect the price of corn by 3%. This could amount to as much as $5,000,000 per year on corn alone in North Carolina. It's not that the buyer of grain is cheating but rather there is no easy way to ascertain the accuracy of the meter.

The seller of grain is at a disadvantage during the harvest season. For reasons of efficiency and price, it is advantageous to harvest grain as early in the harvest season as possible. This usually means the grain is high in moisture and the purchaser will dock the seller because of the extra moisture. This moisture is determined by a device that is not subjected to an official test.

The National Bureau of Standards in conjunction with several grain states has developed a procedure to test the accuracy of moisture meters. This procedure is expensive and labor intesive but the rewards for both the buyer and seller of grain more than offset the cost. So far a number of states including South Carolina, Georgia, Tennessee, Maryland, and Florida have implemented this program.

The approximately 900 moisture meters in North Carolina are a commercial device -- the same as a scale, a gasoline pump, or a taxi meter. The Department certifies these measurement devices. Moisture meter testing, however, is not as simple as certifying other devices. This difficulty in certification requires special handling equipment and laboratory procedures.

In addition to savings to sellers of grain, the person who stores grain will realize savings because of a meter testing program. A more accurate moisture determination may prevent the overdrying of grain. This could result in substantial energy savings.

As with any new program, it just does not happen without people and equipment. A laboratory must be established and people must be hired and trained to perform moisture meter inspections. The Standards Laboratory of the Department can accommodate the moisture meter testing program but repairs will have to be made to the laboratory building. The field inspection force will consist of 4 inspectors and a laboratory technician will be assigned to the laboratory. The field inspectors will be assigned to territories that will afford the maximum inspection with a minimum of travel. Official grain samples will be processed at the laboratory by the technician and these samples will be shipped to the various inspectors. Since the grain season is not a year round one but periodic based on the specific kind of grain, the field inspectors will be assigned weights and measures responsibilities when not involved with moisture meters. This will afford the maximum benefit from the tax dollars.

In summary, the Department will treat grain moisture meters as any other measurement device. They will be approved when correct and rejected when found to be inaccurate.

COST		1981-82	1982-83
1. Salaries & Wages (5 People)		$ 54,420	$ 54,420
2. Benefits		10,872	10,872
3. Supplies (Laboratory & Office)		1,865	1,665
4. Travel		13,680	13,680
5. Repairs to Building		16,500	--
6. Repairs To Equipment		450	450
7. Laboratory Equipment		58,365	--
8. Motor Vehicles		29,200	--
9. Misc. Items		400	400
	TOTAL	$ 185,752	$ 81,498

FOOD DISTRIBUTION DIVISION

Request for Funds to Make Critically Needed Repairs at Butner Warehouse

The Department of Agriculture, in cooperation with the U. S. Department of Agriculture, receives and distributes approximately $30 million of food each year to our school lunchrooms, State Mental Hospitals and other charitable institutions. The department supports this program as a part of the governments farm price support and surplus removal programs. When the government takes over a farm commodity either by loan or surplus removal purchase, the foods are made available to the State for use by the School lunchrooms and charitable institutions. This program benefits both our farmers and producers as well as our school children and hospital patients.

The Department of Agriculture has two state warehouses where the food is received, stored and distributed to the schools and institutions. The warehouse at Butner formerly used was an old army building which had become unusable because of age and deteriorated condition. The 1977 General Assembly recognized the need for a warehouse to replace the Butner facility and appropriated funds to the department to build such a facility. As we were planning the new facility, the Thomas and Howard Warehouse at Butner came on the market. After an evaluation by State engineers, it was decided to purchase that warehouse rather than to build.

Since we occupied the Thomas and Howard Warehouse at Butner in late 1979, we have become aware of the need to repair the building beyond that which was recognized at the time of purchase. The State engineers who checked the building prior to purchase did not indicate the need for such extensive repairs; therefore, the amount reserved for this purpose is inadequate to do the job.

The attached report which we have just secured from T.C. Cooke, P.E., Inc., Consulting Engineers, indicates in detail the need for these repairs.

Summary of Funds Needed for Critical Repairs:

1.	Repairs to Roads, Drives & Parking Areas	$ 89,950.00
2.	Canopy over Rail Dock	$ 37,185.00
		$127,135.00

REPORT

RECOMMENDED ALTERATIONS AND REPAIRS TO THE CENTRAL FOOD DISTRIBUTION WAREHOUSE
N. C. DEPARTMENT OF AGRICULTURE
BUTNER, NORTH CAROLINA

INTRODUCTION:

In late 1979 the N.C. Department of Agriculture acquired an existing warehouse and office facility formerly owned and occupied by a large food distributor, Thomas & Howard Co. The intended use of the newly acquired facility was to serve as a central distribution point for both staple and frozen foods distributed by the N.C. Department of Agriculture for use in various public school food service programs.

Generally, the facility consists of approximately 55,000 sq. ft. (1,100,000 cu. ft.) dry storage space, 4500 sq. ft. office space, 2500 sq. ft. (50,000 cu. ft.) refrigerated cooler storage space, and 4800 sq. ft. (96,000 cu. ft.) refrigerated frozen storage space. Railroad facilities for handling three cars complete with exposed loading dock is available on the North side of the building. On the South side, facilities are available for simultaneous handling of seven (7) transfer trailers. The office area is both heated and cooled. All areas of the building are sprinklered. Water and sanitary facilities are adequate. All interior areas of the building are adequately lighted and electrical service and wiring are suitable for the present needs.

After occupying the building and commencing operation, serious deficiencies were noted in the roofing system and refrigerated storage areas. Other problems became apparent with the roads, drives and maneuvering areas used by large heavily loaded transport vehicles. As operations continued, other changes were noted as being required to provide efficient and economical operation of the facility.

The purpose of this study is as follows:

1. To investigate the problems with the refrigerated storage rooms and make recommendations as to required repairs and/or alterations.
2. To evaluate problems with the existing roof and make recommendations as to needed repairs and/or alterations.
3. To investigate the deterioration of the existing paved roads, drives and maneuvering areas and recommend repairs and/or alterations.
4. To evaluate additional requested changes for improving efficiency and economy of operation.
5. To provide cost estimates for all recommended changes and/or alterations.

PROCEDURES:

Interviews were held with both Administrators in the N.C. Department of Agriculture and with the Line Supervisor responsible for day-to-day operation. On-site visits were made to inspect problem areas and suggested changes. Corrective measures were determined for each problem or suggested change and evaluated for reasonableness, consistent with good practice and adaptation to existing facilities and cost estimates prepared.

FINDINGS & RECOMMENDATIONS:

A. Roads, Parking and Maneuvering Area:

The main entrance road leading from State Road 1215 into the property (665 ft.) has eroded badly from heavy truck traffic. Much of the black top surface is badly broken and in many areas the stone base has been damaged leaving large potholes. The black topping in the parking areas has been damaged heavily by trucks attempting to turn around. The most serious damage has occurred inside the fenced area where large trucks in maneuvering to back up to loading docks have cut away large sections in the asphalt paving.

In order to repair the present damage to the drive, parking area and loading area, the following recommendations are submitted.

1. Entrance Drive - Remove broken and damaged asphalt and replace with 4" stone, 4" black base, tack and top with 1", I-2 asphalt mix and roll to a smooth surface.
   Estimated Area - 655' long x 20' wide
   Estimated Cost - $37,375.00

2. Parking Area - Remove broken and damaged asphalt and replace with 4" of black base. Tack entire parking lot with liquid asphalt and re-surface with 1-1/2" of I-2 asphalt mix and roll to smooth finish.
   Estimated Quantities - 182 sq. yds.
   Estimated Cost - $18,275.00

3. Parking Lot Inside Gate - Remove existing broken and damaged asphalt and replace with 6" of 3000 psi concrete mix with 6" x 6" wire mesh reinforcing with expansion joints 40 ft. on center.
   Estimated Quantities - 2225 sq. yds.
   Estimated Cost - $33,800.00

4. Install lighted sign at entrance road to prevent additional truck traffic into area during night hours. Note that much of the damage to the parking areas has been caused by heavy trucks turning in to facility and using parking lot to turn around.
   Estimated Cost - $500.00

Total Estimated Cost for Repair to Roads,
Drives and Parking Areas..$89,950.00

B. Canopy Over the Rail Dock:

Due to the type of product being unloaded from rail cars, it becomes almost impossible to operate during periods of inclement weather. At times this fact severely affects operations. In order to eliminate this problem, the installation of a canopy roof over the entire loading dock is recommended. This canopy would extend beyond the dock and would cover the entire dock and rail cars. The canopy would have a translucent roof to permit the use of natural light during daylight hours. Installation of this canopy would allow operations to proceed in all weather.
Estimated Cost of Canopy - $37,185.00

2/17/81

STATE FARM OPERATIONS DIVISION

Need for Additional Funds to Purchase Required Farm Equipment and to Replace Barns

The State Farm Operations is composed of twelve farms located throughout North Carolina. The Legislature in 1974 transferred the farms from the State Mental Hospitals and Youth Development Schools. The Legislature also set up a State Farm Operations Commission to set policy for the operation and disposition of these farmlands.

Since there had been a question of the ultimate disposition of these farms for many years preceding 1974, very little had been done to maintain the farms, the buildings and replacement of machinery. When Agriculture received the farms, most of the machinery was worn and obsolete, the buildings also were of obsolete design and required the use of much labor. Previously, the hospital patients and residents of the training schools had been used in the Farm Operation thus supplying an almost unlimited amount of man power. The Legislature in 1977 made permanent the State Farm Operations Commission and directed the operation of the farms to supply food for the State Mental Institutions and Youth Service Schools. The farms produce milk, beef, pork, eggs and some vegetables which are transferred to the Mental Hospitals and Youth Development Schools at no cost to the institutions. The dairy animals, swine and beef cattle, plus milk, are used in a cooperative effort with N. C. State University research projects.

We have made considerable progress in the construction of modern labor-saving farm buildings. However, there are several critical situations which should be remedied immediately by the construction of new facilities. There is also a desperate need for replacement of some of the old worn obsolete farm equipment.

The attached sheet gives details regarding the items which we feel are urgently needed for the operation of the State Farms. These items are as follow:

	1981-82	1982-83
Farm Equipment	$152,102	$70,290
Dairy Lounging Barn - Caswell Farm Unit	$ 46,800	
Swine Feeding Barn - Cherry Farm Unit	$117,000	
	$315,902	$70,290

We must have additional farm machinery if we are to replace that which is so worn and obsolete that it is not practical to repair it.

The barns are critical to overcome situations which must be remedied. At Caswell, a new feeding barn is essential to improve the health of the dairy animals, to eliminate hand labor in cleaning the old barn and to diminish the fly and odor problem which is inherent in the old barn because of the type of construction. The department has received severe criticism from parents of children in the Caswell facility area because of the odor and flies to which the barn contributes.

The swine feeding barn at Cherry is essential in that the old swine feeding facility is in bad condition, must be cleaned by hand, and is located on the flood plain. In times of high water, the water floods the present swine feeding area posing a serious threat for animals and humans from the potential contamination. The city of Goldsboro has recently constructed a water plant which is adjacent to the swine feeding

facility, making the situation more critical that it was previously.

As mentioned above, it is a matter of health, feeding efficiency, and human health and welfare which dictates that we must move immediately to replacing these facilities.

2/17/81

N. C. DEPARTMENT OF AGRICULTURE
STATE FARM OPERATIONS

Expansion Budget
For the Biennium 1981-82 1982-83

Title	1981-82	1982-83
Farm Equipment In order to continue the operation of the state farms at the present level of efficiency, it is necessary that our farm equipment be replaced as it becomes inoperative or repair parts are either obsolete or too expensive to justify repairing. We have not replaced the major agricultural equipment needed on the farms over the past four years due to a reduced equipment budget and increase in farm equipment prices. Therefore we need an additional $152,102 in 1982-82 and $70,290 in 1982-83.	$ 152,102	$ 70,290
Dairy Lounging Barn - Caswell Farm Unit This is a 24' x 144' pole type construction which contains sixty-nine free stalls. This barn will be built near the feeding barn at Caswell. The construction will eliminate the necessity of using the old brick barn which has poor ventilation and is poorly constructed. It is a breeding area for flies in the summer months. This barn will be constructed so the cleaning can be done on a daily basis with equipment and eliminate the hand labor now used in cleaning the old brick barn. We are having difficulties in early abortions with our dairy herd at this farm and some of the veterinarians feel that this poor ventilated barn is the major cause of this problem.	$ 46,800	
Swine Feeding Barn - Cherry Farm Unit This feeding barn will be 40' x 200' with a slotted floor, pole type construction. The present barn has a concrete floor which is cracked and broken because of feeding garbage to the swine on the floor in the past. It is located more than a mile from the other swine, making the efficient use of labor impossible as the pens must be cleaned by hand labor. Since the barn will have a flush type, slotted floor, hand cleaning will be eliminated and will provide a much better environment for the efficient growth of pigs with an improvement in feed efficiency. The present facility is located where the Little River floods and water backs over the floor area. It provides an ideal condition for disease to be spread from other farm sources.	$117,000	

RESEARCH STATIONS

	1981-82	1982-83
ADDITIONAL PERSONNEL HORTICULTURAL CROPS RESEARCH STATION	$ 31,972.	$ 31,977.
EXPANSION OF TOBACCO RESEARCH OXFORD TOBACCO RESEARCH STATION	33,161.	33,166.
LAND ACQUISITION, IRRIGATION SYSTEM, AND IMPROVED DRAINAGE OXFORD TOBACCO RESEARCH STATION	313,000.	
ADDITIONAL PERSONNEL TIDEWATER RESEARCH STATION	16,911.	16,914.
SWEET POTATO FACILITY HORTICULTURAL CROPS RESEARCH STATION		192,000.
BEEF CATTLE FEEDING AND ENVIRONMENTAL RESEARCH TIDEWATER RESEARCH STATION		
OPERATING:	111,324.	39,305.
CAPITAL IMPROVEMENT:	236,111.	
	742,479	313,362

Department of Agriculture
Research Stations

CRITICAL NEEDS

Research is the seeking of new knowledge. Subject information is sought to allow farmers to produce adequate food and fiber at a profit and at the lowest cost possible for consumers. Current specific components of research needing additional attention are needs for expanding opportunities with production of horticultural crops; growing, curing, processing and distributing a healthy, clean tobacco product; devising methods and procedures for profitably finishing out beef animals in eastern North Carolina where grain is plentiful; enhancing potential yield capabilities for corn, soybeans, and other grains; finding new crops that have potential for North Carolina farmers and many other similar opportunities.

In North Carolina, public agricultural research seeks to obtain its goals by a team approach. Scientists develop, design and monitor experiments. Early stages of an experiment may be conducted in campus labs or the phytotron, but eventually it must be carried to the field where it will ultimately be used. When an experiment is ready for field evaluation, the Division of Research Stations then becomes involved. The Division of Research Stations operates or manages all 15 outlying public agricultural research stations, which are often considered field labs. These stations are located throughout North Carolina in all production belts where the information will have application. Division personnel execute experimental plans and care for field projects, with exception to imposing some variables and taking some data. The total effort may be viewed as a chain with each component serving as a link.

For the Division of Research Stations to accommodate its role obligations, several needs are cardinal.

	1981-82	1982-83
1. Additional Personnel and Support Resources	$ 82,044.	$ 82,057.
3 new employees - Hort. Crops-Clinton		
1 employee - Tidewater - Plymouth		
2 employees - Oxford Tob Res Sta		
2. Capital Improvements	660,435.	231,305.
Land acquisition and related needs - Oxford		
Sweet Potato facility - Hort. Crops		
Beef Cattle feeding and environmental research facility and operating support resources - Tidewater		

It should be noted that once the beef project is implemented fully, it will be almost self-supporting. Funding of the aforementioned needs will allow us to support efforts to find a solution to the "Southern stem blight," a disease that has almost stopped tomato production in southeastern North Carolina; obtain information which will enhance the probability of expansion in asparagus production; and hasten opportunities for expansion of cabbage, broccoli, carrots and other cool season crops that will enable farmers to more fully utilize high cost lands by growing crops most every month of the year and with compatibility to such companies as Campbell Soup, Joan of Arc, and others;

seek methods to mechanize sweet potato harvesting, field to shed handling, washing, grading, curing and storage. It should be noted that sweet potato production might rival tobacco for net farm income per acre. Discussions have centered upon the possibility of growing sweet potatoes for two purposes: 1) eating and 2) for production of gasohol. Further, answers must be found to identify components in tobacco that are harmful; expand protein work with tobacco; obtain alternate methods for curing; develop varieties that may more nearly meet health needs and standards; and many other important outstanding questions regarding tobacco production. It should be emphasized that this is the last year of the lease with an option to purchase the 85 acre tract so essential to our tobacco program. Moreover, with answers to some questions regarding finishing out beef animals in eastern North Carolina, a whole new industry will be found, and one that will significantly aid North Carolina grain producers. The cattle finishing industry has not grown in North Carolina because of adverse effects of environmental conditions such as high temperature, high humidity and excess rainfall on performance of cattle. If those questions, as well as the type facilities that might be used to minimize those environmental problems, are answered, a sound feeding and management practice program will be developed that will allow this industry to grow by leaps and bounds.

If the requested resources are provided, opportunities for significant improvement for North Carolina farmers and consumers are near. If, however, funding is not granted, the weak link in the research chain will be the outlying research stations programs. Research, therefore, will be hampered and ultimately farmers and consumers will lose because needed knowledge will not be available to meet changing conditions and circumstances.

	1981-82	1982-83
TITLE: Additional Personnel Horticultural Crops Research Station	$ 31,972.	$ 31,977.

OBJECTIVE: To provide dependable and adequately trained manpower for conducting scheduled vegetable research on the Horticultural Crops Research Station.

JUSTIFICATION FOR FUNDING: The Horticultural Crops Research Station at Clinton is essentially developed for research purposes. In fact, in the last five years, research on the Horticultural Crops Research Station has expanded approximately 73%, and rotational crops approximately 100%. Moreover, in the last few years, approximately 35 additional acres have been cleared and developed for station use. Increased efforts in vegetable research has occurred by using temporary labor and using classified personnel overtime. Temporary labor is becoming more and more difficult to obtain, and, particularly, at times most needed. Additionally, temporary personnel are not fully trained and dependable, and must be closely supervised while an almost continuous training period is utilized. When classified personnel are used overtime, time must be given off at time and a half, or either paid. With most of the station personnel earning extensive overtime, and the policy discouraging payment for such overtime, it leaves the station in a difficult situation when this overtime must be given off. Further, work at the station has expanded yearly, as noted above, as well as becoming more and more sophisticated; it requires more and more competence and closely supervised efforts. Moreover, vegetable research is a high labor demand project and requires more closely supervised efforts than many other kinds of research. All personnel must view and be aware of signs of insects, plant response and conditions, and unless a stable workforce is available, it is difficult to obtain the kind of personnel sensitive to the needs of such a program. For example, sweet potatoes in North Carolina is expanding yearly and, therefore, requires questions answered as well as new knowledge concerning many aspects of cultural sweet potato production. North Carolina is the number one sweet potato-producing state in the nation, and more efforts need to be directed to this crop. To allow the station to meet the needs of the research effort at that location, the three classified positions are urgently and sincerely needed. Almost the cost of positions requested is presently expended by hiring temporary labor as noted above.

Department of Agriculture
Research Stations

	1981-82	1982-83
TITLE: Expansion of Tobacco Research Oxford Tobacco Research Station	$ 33,161.	$ 33,166.

OBJECTIVES: To improve rotational scheme commensurate with recommended tobacco cultural practices and to expand tobacco research acreage at the Oxford location by 85 acres.

JUSTIFICATION FOR FUNDING: During recent years, an intensified need for expanded research at the Oxford location has been observed. For example, in the last six years, research has expanded 67% and rotational crops have expanded 53% at that location. To meet the needs of such an expanded program, a less than desirable rotational scheme has been used. Under such intensive use a two-year rotation for tobacco could not be maintained, so January 1, 1979, approximately 85 acres of land was leased for a three-year period. Leased land allowed the station to improve the rotational scheme and allowed for some essential expansion in tobacco research. Primarily, the new expanded efforts have been protein work with tobacco and this program still needs to be expanded considerably. Additionally, a black shank nursery was established on the Oxford station property, and the nursery must be expanded to a ten-acre unit for tobacco breeders to intensify breeding work to help address the health issue currently facing the tobacco industry. Moreover, during the last few years, approximately 5½ acres of good research land has been lost to a road that will be going through the station.

Further, solar curing research has been initiated and will be expanded at the Oxford location to help answer questions relative to better methods for curing tobacco and conserving energy. With the energy situation so important, it is necessary to look for alternate ways for curing tobacco, and Dr. Bill Johnson is investigating various methods of artificially curing tobacco; but the primary emphasis is with the solar curing. It is evident, therefore, that additional resources must be made available to allow this station to expand the research program with tobacco to meet needs of current industry conditions. To assist North Carolina tobacco farmers and the tobacco industry to meet the needs of public, governmental, and individual criticism concerning tobacco use and consumption, the aforementioned funds are essential for an orderly and effective response with the new research knowledge.

Department of Agriculture
Research Stations

	1981-82	1982-83
TITLE: Land Acquisition, Irrigation System, and Improved Drainage Oxford Tobacco Research Station	$313,000.	

DESCRIPTION: The land in question is composed of approximately 85 acres. This land has been fully studied and reviewed by the Soil Science Department, at N. C. State University, and found to be the best acreage suitable for research purposes in Granville County.

As it relates to irrigation, there is a pond located on the land suitable enough to provide water for the total acreage. Some 5000 feet of PVC underground main lines will be needed, a pump, and approximately 8 acres of portable equipment. A minumum amount of drainage work would be desired on some areas of land.

JUSTIFICATION: The Oxford Tobacco Research Station has indeed the most extensive and diversified research program in tobacco in the world. Today programs on the station encompass every major area of research being conducted on tobacco. Plant breeding, physiology, entomology, pathology, production, harvesting, curing, fertilization, weed control, engineering, biochemistry, and variety testing gives some idea of the intensified research effort. In the past couple of years every variety of tobacco grown in the world was found in the plant bed area. Along with this variety and volume of research comes the need for available land that is suitable to conduct agricultural research. The two key words here are available and suitable land area.

Realizing that additional land was needed to carry out the research program at Oxford some time ago, Soil Scientists began searching for additional land in Granville County that would be suitable for an agricultural research program. Soil fertility, composition, texture, consistency, drainage and type are all factors that must be considered. After a very thorough search, such suitable land which would require some standard drainage work was located in the County. Then became the question of the availability of this land. It happened that the land was not in production and we were fortunate to establish a three year lease with a purchase option included. The use of this land has solved and saved the ongoing tobacco research program at Oxford; therefore, we feel the acquisition of this land is critical to our operation and the tobacco industry as a whole.

There are several reasons why the land purchase is so critical at this particular time:

1) This is the last year of the lease agreement on subject land; therefore, our purchase option will be lost this year. As previously mentioned, available land suitable to our programs is difficult to find. Losing the purchase option would be a severe blow.

2) Another factor is the actual location itself. The 85 acre tract is located only 3½ miles from the main station, which makes it easily accessible to the personnel on the Oxford station. The moving of equipment and supplies to the location has presented no problems at all.

3) The irrigation and drainage capabilities on the tract are very suitable for research. A pond is located on the land which can provide the volume of available water required for the acreage in question. The funds being designated for irrigation would be used to purchase a pump, underground mains, portable pipes and risers. Only the basic drainage practices would be required as the drainage properties of the soil are suitable. We have specified irrigation and drainage with the land purchase because water is the most important single factor to any research project. Much time and valuable monies invested in a particular project can be lost if water is not available during certain phases of the program.

4) One other single factor that is of major importance to tobacco research is crop rotation. The additional acrease would provide the land space required to sufficiently carry out an adequate rotational program in tobacco at Oxford. Once the land now in question is lost, the program will have to be cut drastically in order to comply with the cultural practices required for this crop.

Tobacco is important to the people of Granville County. It is the most important source of income in the area and, therefore, research is needed at this location to provide these people with the most up-to-date and economical practices available today in the area of tobacco production. The local farmer and businessman has neither the time nor resources to experiment and toy with new ideas and methods. They look to us, the Research Stations, for this information and guidance. There is one other very significant fact here, however, that should be mentioned. Unlike many other commodities whose importance is restricted to a certain area in our state, tobacco is important to each individual in North Carolina, not just the population of Granville County. Revenues generated from this crop are vast and their absence would simply have a devastating blow on the economy of this state.

	1981-82	1982-83
TITLE: Additional Personnel Tidewater Research Station	$ 16,911.	$ 16,914.

OBJECTIVE: To provide supervision and leadership for expanded crops research at Tidewater Research Station.

JUSTIFICATION FOR FUNDING: The research program at the Tidewater Research Station has intensified significantly. Over the last several years, 220 acres of additional land has been cleared and in various stages of development. As this new acreage is being more fully utilized for research purposes, it has intensified the need for proper supervision of on-going research. Additionally, the station superintendent is being required to assume greater and greater administrative responsibilities, and is reducing his opportunity for more station involvement in research. Accordingly, the major responsibilities for supervision and guidance of the field research program is left to the Agricultural Research Technician II that has overall responsibilities for station operations. It is almost impossible for one technician and the limited involvement by the superintendent to properly execute experimental plans and carry out other responsibilities of the station's program. It is planned, therefore, that this new position will assume all responsibilities for crops research and for growing of animal feed now being produced for beef cattle and swine. The recent addition of new personnel has increased the supervisory span of control more than can effectively be managed. It is felt, therefore, that the addition of this individual will allow for more effective and efficient operation of the total research station by dividing responsibilities to a point that proper leadership, guidance and supervision can be given total efforts at Tidewater Research Station. The last session of the General Assembly provided operational resources and some personnel for the expanded program at the Tidewater Research Station. With limited experience with the expanded efforts, it certainly indicates that the requested position is essential to allow proper and efficient utilization of total State resources at the Tidewater Research Station.

	1981-82	1982-83
TITLE: Sweet Potato Facility Horticultural Crops Research Station		$192,000.

DESCRIPTION: The facility will be a 50' x 80' pre-engineered metal building on a 4" concrete floor. The facility will contain experimental curing and storage chambers, grading and washing equipment, and a handling system for sweet potatoes. The curing chambers will contain insulated walls and ceiling, and humidity and temperature controls.

JUSTIFICATION: Sweet potato mechanization developments have progressed to the level at which it is necessary to provide the opportunity for full system studies in a research farm setting. Appropriate integration of the harvest and post harvest handling systems requires system studies before implementation.

Harvesting and field-to-shed handling equipment is available and is being used for research in these areas. However, there exists no suitable facility for experimentation with washing, grading, curing and storage innovations. Provision of such a facility will allow pilot scale full system operations which will be invaluable in researching and later demonstrating total system alternatives to the advantage of sweet potato growers of North Carolina.

The objective of this proposal is to provide a building on the Horticultural Crops Research Station at Clinton for use in sweet potato mechanization studies. The building will have a layout which will provide a wide range of experimentation with post harvest handling systems. It will allow the construction within it of experimental curing and storage chambers where accurate comparisons of bulk curing and storage with conventional methods can be made. It will provide a protected environment in which intrafacility handling approaches can be studied during winter months. It will allow further studies of the application of fluming in this connection.

Sweet potato production is of first importance in terms of size among the fruits and vegetables now produced in North Carolina. Labor pressures are facing the industry to adopt mechanization alternatives. These alternatives, to be effectively used, must be considered in terms of the overall system. In order to give adequate consideration to the various system interactions in an environment conducive to objective research, a full system facility is required.

	1981-82	1982-83
TITLE: Beef Cattle Feeding and Environmental Research Operating - Tidewater Research Station	$111,324.	$ 39,305.

OBJECTIVE: To study environmental and economic aspects of feeding cattle in North Carolina.

JUSTIFICATION FOR FUNDING: The beef cattle industry in North Carolina has grown tremendously over the past 30 years, presently exceeding one million head. This growth has been primarily in the area of the cow-calf and stocker enterprises in which feeder cattle are the end product. North Carolina has many reasons for exploring an expansion of the finishing phase of the beef cattle industry including the following:

1. Close proximity to the East Coast beef-deficient population center.
2. The need to reduce escalating energy costs in transporting cattle to and from calf producing, finishing, and beef consumption areas. (Currently feeder cattle are leaving North Carolina for midwestern feed lots, and beef is returning to the East Coast for consumption.)
3. Huge quantities of by-product feeds are available from the grain production industry which could be used as feed resources for combined stocker-finishing beef cattle operations.

However, the cattle finishing industry has not grown in North Carolina primarily due to the adverse effects of environmental conditions such as high temperature, high humidity and excess rainfall on performance of cattle. Due to a lack of documented evidence on the influence of different facilities in minimizing these environmental problems, a strong research program is needed to guide beef producers in efficient and sound feeding and management practices. Solving these problems would strengthen the current beef industry by increasing an in-state demand and a more competitive market for our feeder calves and would also help to create another industry in North Carolina.

(See attached page for Capital Improvement to support this project)

	1981-82	1982-83
TITLE: Beef Cattle Feeding and Environmental Research Facility - Capital Improvement Tidewater Research Station	$236,111	

DESCRIPTION: 1) Grain and grass system with concrete slab. These pens will be approximately 14' x 72' each with a 14' covered feed bunk along one side. Adjoining the feed bunk will be a 14' x 14' concrete slab to allow animals to be out of the mud while feeding.

2) Grain and grass system with concrete slab and mound. These pens as described above plus a 750 sq. ft. mound area to provide a dry area for the animals to lounge.

3) Total confinement systems. Three pens, approximately 14' x 14' each with a 14' covered feed bunk along one side. The entire area will be slatted flooring.

4) Grain on grass system. Three pens, approximately 14' x 72' each with a 14' covered feed bunk along one side. Note: all pens for all four systems will have sunshades and sprinklers for summer cooling.

JUSTIFICATION: Even though the beef cattle industry has grown steadily in the past few years, most of our animals are still being shipped to the midwest and southwest for finishing. With the pastures we have at our disposal, and the increase in grain and soybean production and storage in this area we should be finishing more cattle in our own state; therefore, we need a strong research program aimed towards directing cattle producers in North Carolina to efficient and sound feed management practices in finishing beef cattle. The new facility would have four major environmental systems under which the most recent feeding and finishing programs would be conducted.

Research is needed on the type of lot facilities which are best suited for feeding cattle. This research should include determining the effect of high summer temperature and humidity and the combination of the two on cattle performance, and then finding rations and environmental controls which minimize such problems. It is known that these factors reduce cattle performance but the extent to which they reduce performance in North Carolina is unknown at present. Very little, if any, application information is available from other states which would aid North Carolina feeders. Initial studies will explore the problems of mud in the winter and heat and humidity in the summer. This would be accomplished by comparing the feed lot and economic performance of cattle fed on pasture with those fed in concrete lots, concrete lots plus mounds, and on slatted flooring. This will, therefore, provide basic information to prospective feeders on costs and the different management housing systems. Once the most desirable feed lots are determined, rationed ingredients will be evaluated as to feeding value and as to their effectiveness in minimizing heat production and heat loss in the animal. Subsequent studies will involve various feeding and management systems for stocker and finishing cattle. This research, it is believed, would strengthen the entire beef cattle program in North Carolina.

MARKET DEVELOPMENT

One of the greatest needs facing our state's agriculture today is the development of new and expanded markets for our farm products. The extent to which this is done in the months and years ahead will be a major factor in determining how many of our remaining farmers survive and how many go broke.

North Carolina today ranks among the top ten states of the nation in the production of seventeen different farm commodities among which are tobacco, sweet potatoes, peanuts, broilers, turkeys, eggs, apples and peaches. It is among the top twenty states in the production of thirty different commodities and, in terms of cash receipts from farm marketings, it ranks twelfth among the fifty states. It is readily apparent, therefore, that the bulk of several of these products must be sold to out-of-state markets.

Despite our state's high ranking in agricultural production, we are continuing to expand our production of several commodities. As a result, suppliers of these products are seeking channels of trade outside of the traditional markets. This coupled with the well-financed, highly professional market development programs being conducted by many of our sister states is resulting in normal channels of trade being filled, traditional markets being over supplied and the resulting weakness in prices.

So effective are the market development programs being carried on by other states that North Carolina has no alternative but to combat these efforts by waging similar programs on behalf of our state's products. The longer we delay getting these underway, the more serious will be the consequences.

As an example of what several states are doing, Minnesota's efforts are somewhat typical. Last summer an "All Minnesota Products" dinner was staged in Charlotte and was attended by representatives of dozens of North Carolina's major food buyers and distributors. With few exceptions, the same products they featured were produced in quantity here in our own state. Not only did the Minnesota Department of Agriculture have staff people in the state prior to and during this event, but they had a number of industry representatives with them who had order books in their pockets. This was not a dinner just to treat the people they had invited--it was strictly business but was conducted in an atmosphere to achieve the desired results--sales. Just how much this one event cost the State of Minnesota, only they can tell. It was obvious, however, that it was well into the five-figure category. They conduct eight such events each year in strategic market areas throughout the nation and this was the second one they have staged in North Carolina in the past ten years.

Wisconsin is currently involved in a similar type promotional effort in Charlotte. This will be culminated on March 12 with the preparation, display and consumption of a 100-foot long cheese dog at the NCNB Plaza in downtown Charlotte. Thousands of dollars and numerous man-days of advance preparation have already gone into this event. Thousands more will be spent as the Wisconsin group returns in March. They, too, stage similar events in other market centers throughout the nation each year--all in the name of Wisconsin farm products, particularly cheese.

Other such activities are being conducted by our neighboring states--some not of the magnitude of the two just mentioned--but effective nevertheless.

Not only are these efforts capturing more and more of our home market here in our own state but they are moving into other markets where our products have traditionally been shipped thus reducing the amounts we can continue to move into these markets.

The North Carolina Department of Agriculture is endeavoring to honor industry requests to assist in developing new market outlets, but limited resources are preventing them from doing the job they feel needs to be done. Several of the commodity groups within the state have supplemented these efforts both in terms of finance and manpower. However, they, too, are operating on limited budgets.

Earlier this year, for example, the Department sent two of its marketing specialists to Quebec along with a beautiful 16-foot wide exhibit, designed and built by the Department's staff. They went there to promote the sale of four of our state's products--apples, tomatoes, Irish potatoes, and sweet potatoes--in one of Canada's major food shows. Fortunately, two industry leaders from our state were present throughout the show and they reportedly came back with orders in their pockets.

This is but one instance where properly supported efforts can bring needed results. This state needs to show up these efforts and not duplicate the work carried on by sister states but do more than they are doing. Selling agricultural products is not vastly different from selling any other products, it is an extremely competitive market.

The approximately $121,000 being requested for each year of the biennium will provide the Department with needed supportive services for carrying on its market development work. It will provide for three additional staff positions--one marketing specialist, one home economist and an artist. This expanded staff will permit a variety of activities to be carried on simultaneously both within and outside the state.

These funds also would permit the preparation of two professional type portable exhibits for use in a variety of events where large numbers of people are in attendance. These would be so planned and constructed that they could be used on behalf of a single commodity or for a variety of commodities.

Needed printed items could also be available for distribution if these funds are granted. Such materials are extremely beneficial for hand outs at food shows, etc. Posters, recipe booklets and other informational folders on the variety of quality products available in the state would also be helpful in these efforts.

A portion of these funds would also be used to stage two "North Carolina Products Events" in North Carolina and two at out-of-state locations. These would be conducted primarily as a means of reaching buyers and obtaining as much news media coverage as possible.

While numerous ones would benefit from an effective market development program, the primary benefactor should be the producer. Becuase, it goes without saying, the one who suffers most when distribution channels are limited or over-supplied is the producer, be he large or small.

BUDGET CODE 13700 TITLE Department of Agriculture

PROGRAM (FUND) CODE 1020 TITLE Marketing

TITLE OF REQUEST Market Development

BUDGET SUBHEAD

OBJECT CODE	DESCRIPTION			1981-82	1982-83
1020:					
1211	Salaries and Wages-SPA			$ 53,316	$ 53,316
		1981-82	1982-83		
	1 Artist Illustrator @ $10,476 (1st. stp.)	$10,476	$10,476		
	2 Marketing Specialists @ $21,420 (3rd. stp.)	$42,840	$42,840		
1811	Social Security Contribution			5,150	5,150
1821	Retirement Contribution			3,561	3,561
1831	Hospitalization Insurance			1,188	1,188
2600	Office Supplies and Materials			41,500	41,500
2990	Other Supplies and Materials			7,500	7,500
3100	Travel			18,000	18,000
3210	Telephone Service			300	300
3250	Postage			300	300
3510	Buildings			9,000	9,000
3990	All Other Services			20,000	24,000
4130	Rent of Offices			2,400	2,400
4390	Rent of Other Equipment			1,000	1,000
4903	General Expense			5,000	5,000
5100	Office Furniture and Equipment			1,800	825
5500	Other Equipment			5,150	2,710
			Total Requirements	$121,849	$122,434

OBJECTIVES: To develop and establish both within and outside the state a minimum of 20 new market outlets for North Carolina food products during 1981-82 and 40 during 1982-83. To utilize mass news media and other means to encourage consumers throughout North Carolina to ask for and purchase North Carolina agricultural products.

NEED FOR EXPANSION OF ROLLINS LABORATORY
(1981-82 Budget)

Rollins Laboratory, located in Raleigh, is the central unit of an eight laboratory animal disease diagnostic laboratory system operated by the N. C. Department of Agriculture. Its purpose is to help animal owners and veterinarians identify animal diseases in order to prevent or minimize losses. In some cases, human health is protected. It receives dead and diseased animals for examination and various specimens submitted by owners and veterinarians. In addition, it serves as a reference laboratory for the seven branch laboratories. Tissues and other specimens for microscopic examination, chemical analysis and identification of viruses, or other organisms which cause disease, are sent in from the branch laboratories. (About forty-three percent of the Rollins Laboratory specimens are from the branch laboratories.) Prompt action is needed to prevent losses, so it is important that reports be accurate and not delayed. The building of new branch laboratories in recent years has increased the load on Rollins Laboratory. Any breakdown in the service offered at the central laboratory is reflected in poorer service to animal owners served by the branch laboratories. Losses to farmers ultimately result in higher costs to consumers.

A 12,000 square foot addition to the Rollins Animal Disease Diagnostic Laboratory is needed. The projected cost of the addition is $1,714,587. The added space is needed because the volume of work conducted at the laboratory has outgrown the existing building. This results in delays in getting work completed and will in the near future cause some of the essential services now offered to be restricted or discontinued. During FY 1979-80, Rollins Laboratory had 21,911 cases. This included post-mortem examinations on 6,222 animals.

Poisioning of animals is an important cause of loss to livestock, poultry and other animal owners. Practically all of the tests associated with the poisioning of animals, including those examined at the seven branch laboratories, are done at Rollins Laboratory because it is too expensive to maintain the required trained personnel and facilities at more than one location. The chemistry section at Rollins Laboratory is now located in a federal surplus property trailer adjacent to the main building.

Virus diseases are very costly to the state's animal owners. Identifying the individual viruses is the first step in preventing these losses. All of this is done at Rollins Laboratory. None of the seven branch laboratories has the facilities or personnel for this type work. The virology section is partially housed in a federal surplus property trailer. Tests must be started in one area and completed in another, making for the inefficient use of people and increasing the chances for mistakes or accidents.

Rollins Laboratory receives 50 to 75 specimens a day by mail or parcel service. (This is in addition to the animals submitted.) Packages are opened and processed in areas of the building where animals are held and poultry examined. This is undersirable from a disease control standpoint because some of the containers must be returned to the shippers. There is a real danger of spreading diseases in this manner.

In order to take advantage of volume discounts in the purchase of laboratory supplies and to maintain inventory control, supplies are stocked at Rollins Laboratory for all of the laboratories. A small stockroom in the existing building and two temporary plywood outbuildings are used for supply storage.

Three government surplus trailers and two plywood outbuildings supplement the space at Rollins Laboratory. All are expensive to maintain, heat and cool. None of the structures are expected to last another five years. Vandalism and theft are difficult to control. OSHA standards cannot be fully observed.

The first class for the new Veterinary School at N. C. State University will be enrolled this fall. Plans have been made to make use of the large volume of animal disease teaching material which passes through the laboratory by assigning students and faculty to the facility. This will be beneficial to all concerned, but the crowded conditions now prevailing in the building will make the arrangement difficult and less effective.

The increased space would make it possible to get rid of the five temporary structures now in use and relieve some of the congestion in the main building. It would also make it unnecessary for us to restrict or discontinue some of the services when the trailers and outbuildings become unusable. The reduced amount of time needed to make examinations and tests, and get out reports in a better organized facility would reduce disease losses to animal owners. Relieving the crowding would lessen the possibility of accidental spread of diseases from the laboratory. Failure to provide more space at Rollins Laboratory will cause a progressive deterioration in the efficiency of operation and result in a decrease in the quality and volume of animal disease diagnostic service offered statewide to animal owners.

TFZ:dm

2-16-81

Listed below are the names and telephone numbers of the division heads whose programs contain the critical and essential needs described in this packet.

Aflatoxin and Forage Testing - Mr. Leonard Blanton, Acting Director, Food and Drug Protection Division - 733-7366

Soil Testing and Nematode Assay - Dr. Donald Eaddy, Director, Agronomic Services Division - 733-2655

Improved Gas and Oil Inspection, Capability to Test Alcohol and Synthetic Fuels, Capability to Test Grain Moisture Meters - Mr. David Smith, Director, Consumer Standards Division - 733-3313

Food Distribution Warehouse Repairs, State Farm Barns and Equipment - Mr. Jay Davis, Director, State Farm Operations and Food Distribution Division - 733-7661

Research Stations Support - Mr. Pat Kelley, Director, Research Stations Division - 733-3236

Market Development - Mr. Curtis Tarleton, Director, Marketing Division - 733-7887

Rollins Diagnostic Laboratory Addition - Dr. T. F. Zweigart, Director, Animal Health Division - 733-7601